U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Residential Evaluator Training

June 2010

How to Use this Presentation

- **The purpose of this training** is to provide the tools needed and specific training to evaluate residential compliance with the 2009 IECC. It will also provide useful training in general residential field inspection for energy code compliance. **The recommended background** for taking this class is significant experience and/or certification on the IECC in a plan review or inspection capacity.

- With the goal of providing complete and engaging materials, this presentation includes both speaker notes and an essential video clip on plan review.

  – We encourage you to review the speaker notes.

  – The presentation is not complete without the video clips. They can be viewed if you have windows media player, or comparable software.

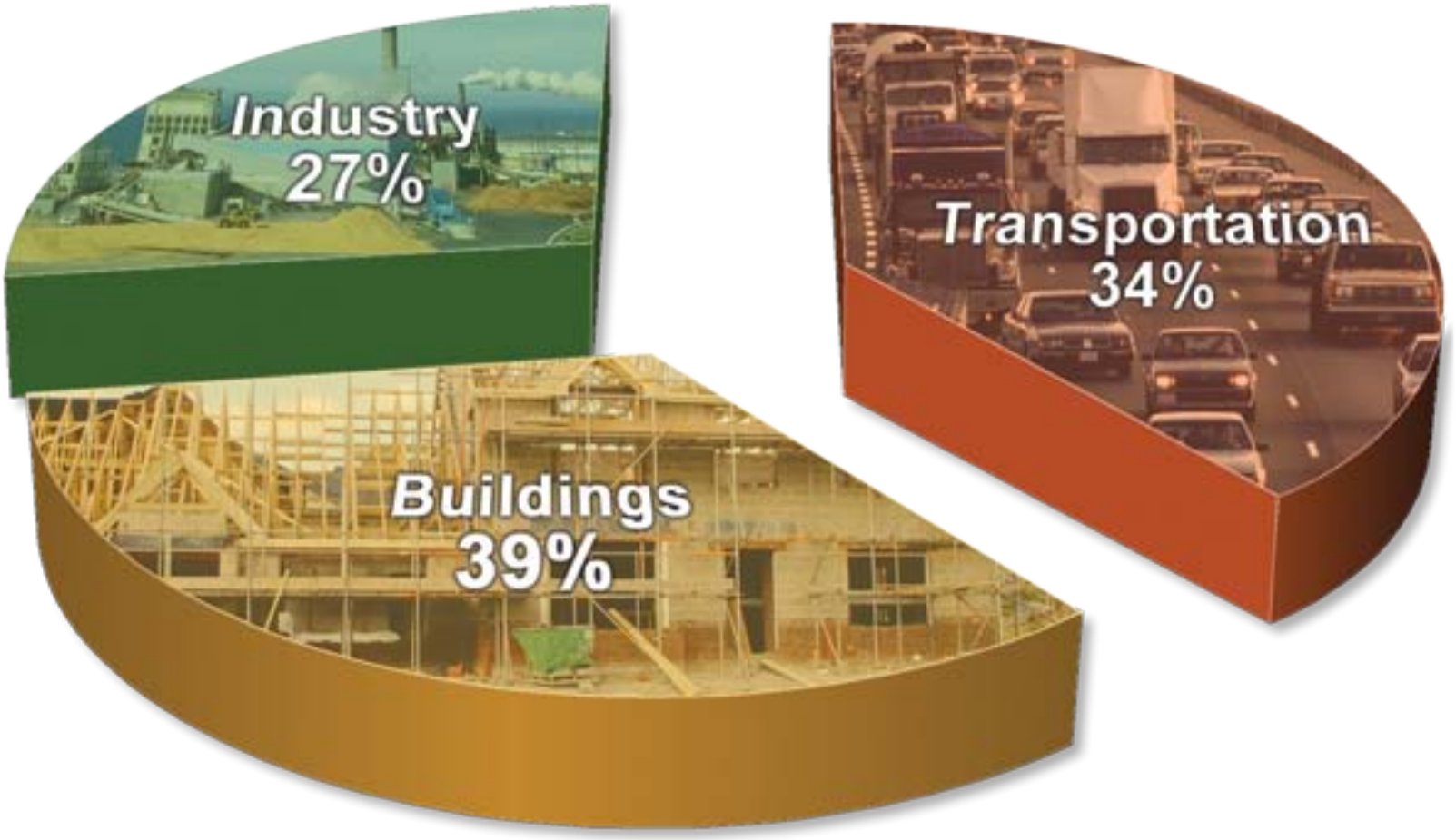
  – If you are downloading the materials to your computer, the presentation and clips must be kept in the same folder.

- Feedback on these materials is welcome, and should be directed to techsupport@becp.pnl.gov, please not e the title of the training materials in the subject line.

Training Outline

- Objectives and Benefits of Adopting Building Energy Codes and Measuring Compliance
- Compliance Evaluation Procedures
  - Sample Populations
  - Sample Size
  - Sample Distribution
  - Sample Makeup
  - Assigning Compliance Rates
    - Individual Building Metrics
    - State Compliance Rates
- **Using the Evaluation Checklists**

U.S. Energy Use



Code Benefits

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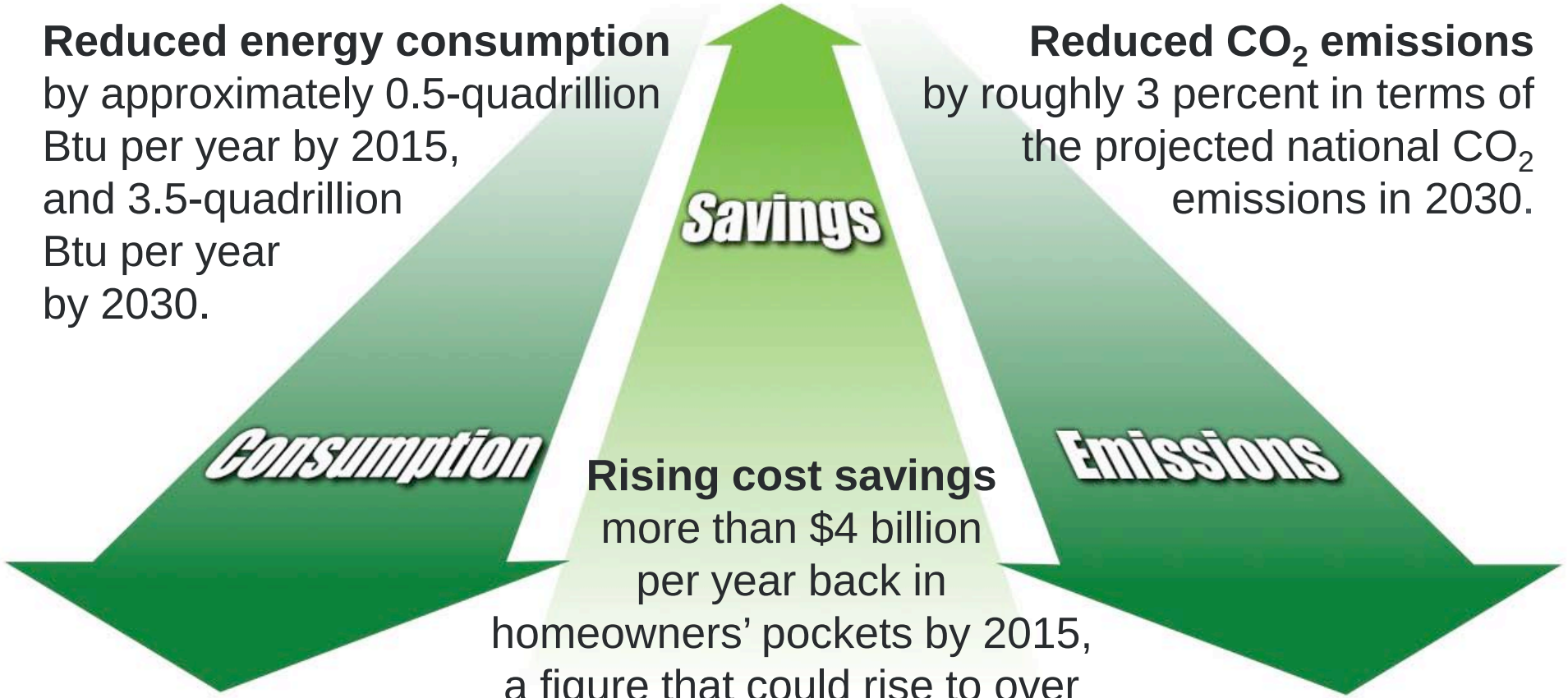
Reduced energy consumption by approximately 0.5-quadrillion Btu per year by 2015, and 3.5-quadrillion Btu per year by 2030.

Reduced CO_2 emissions by roughly 3 percent in terms of the projected national CO_2 emissions in 2030.



Rising cost savings more than $4 billion per year back in homeowners' pockets by 2015, a figure that could rise to over $30 billion per year by 2030

Baseline: IECC and ASHRAE 90.1

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IECC applies

Both IECC and ASHRAE 90.1 apply, either used to comply

Both IECC and ASHRAE 90.1 apply, ASHRAE 90.1 likely used

Sample Size and Distribution

- 44 each of new residential and new commercial, and 44 each of renovations to existing residential and commercial
- Distributed throughout states based on climate zone and population
- Distributed over a representative sample of different building sizes and uses

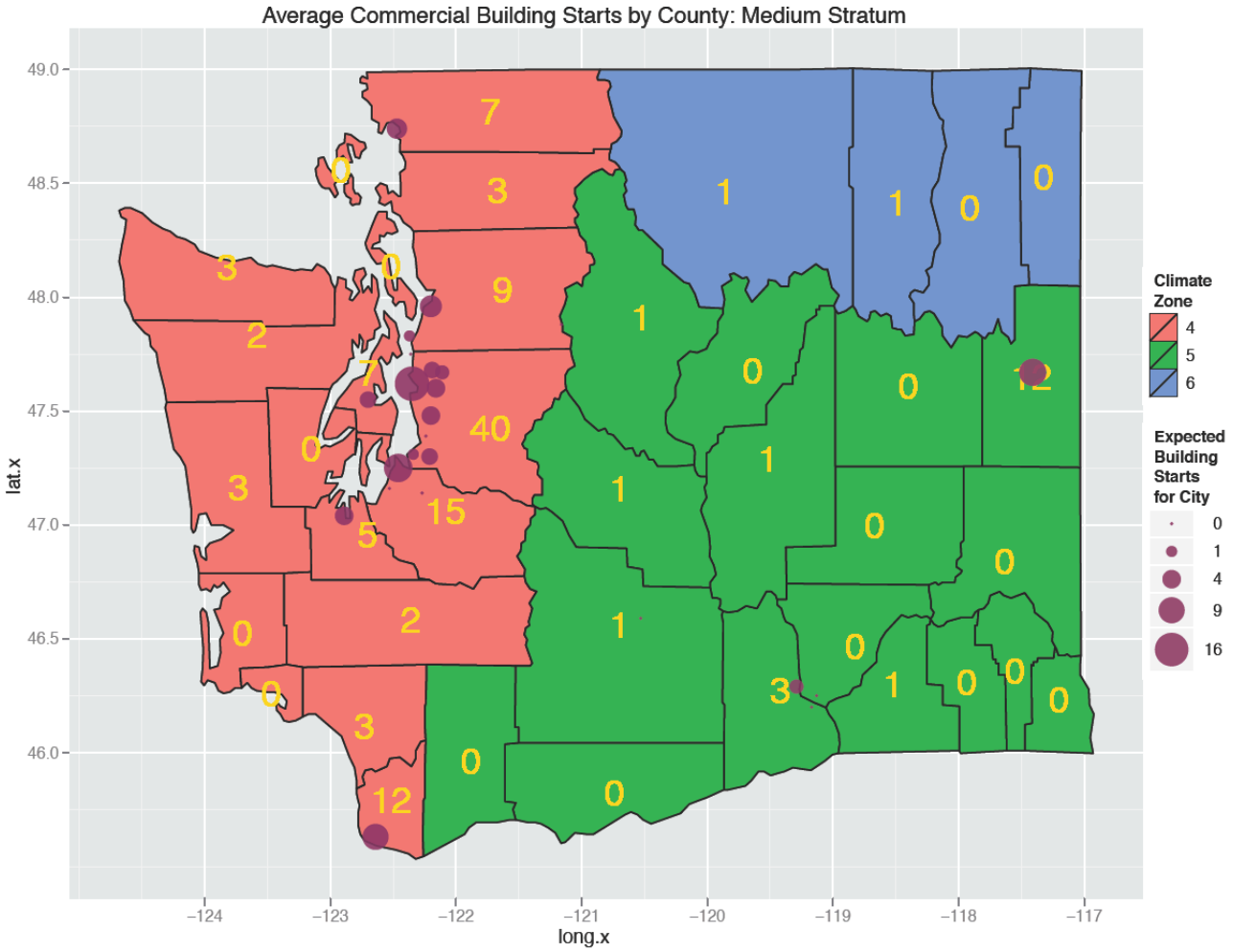
Evaluating compliance of four distinct building populations:

- **Residential new construction**
- Commercial new construction
- **Residential renovations**
- Commercial renovations

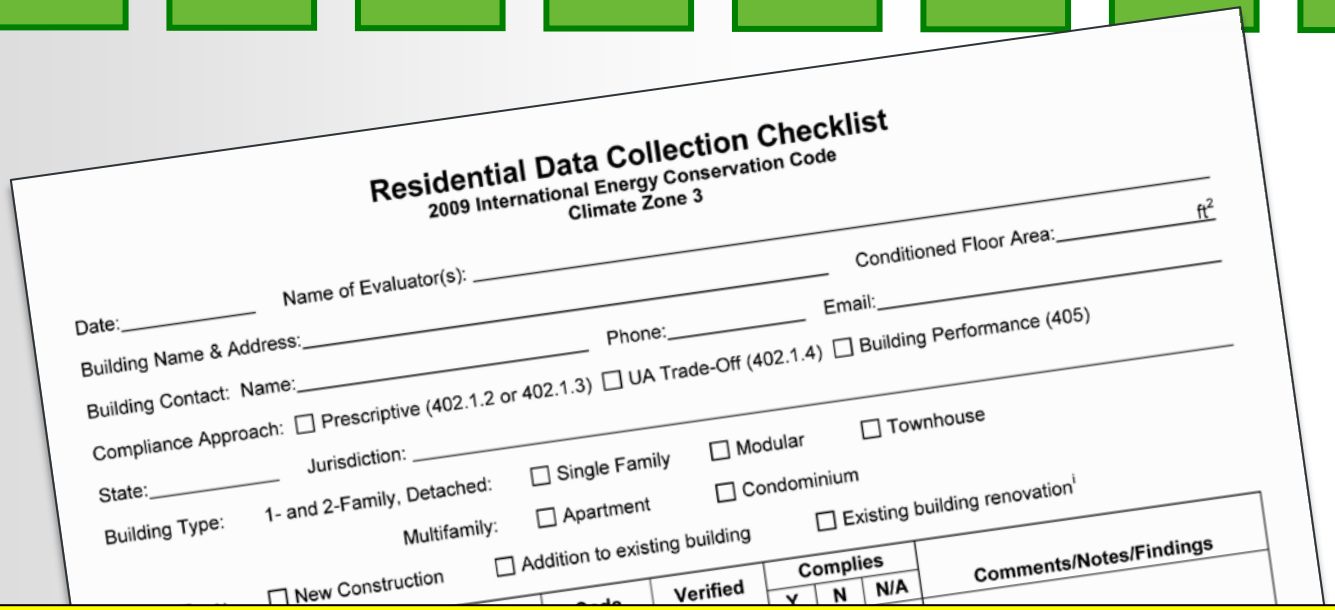
Residential Renovations: Any work on or in existing residential buildings where all or part of the work being performed is required to meet code and for which a permit was issued, including additions, alterations, and repairs

Generating a Sample

Distribution



Generating Individual Building Metrics



Residential Data Collection Checklist
2009 International Energy Conservation Code
Climate Zone 3

Date: _____ Name of Evaluator(s): _____ Conditioned Floor Area: _____ ft^2

Building Name & Address: _____

Building Contact: Name: _____ Phone: _____ Email: _____

Compliance Approach: ☐ Prescriptive (402.1.2 or 402.1.3) ☐ UA Trade-Off (402.1.4) ☐ Building Performance (405)

State: _____ Jurisdiction: _____

Building Type: 1- and 2-Family, Detached: ☐ Single Family ☐ Modular ☐ Townhouse

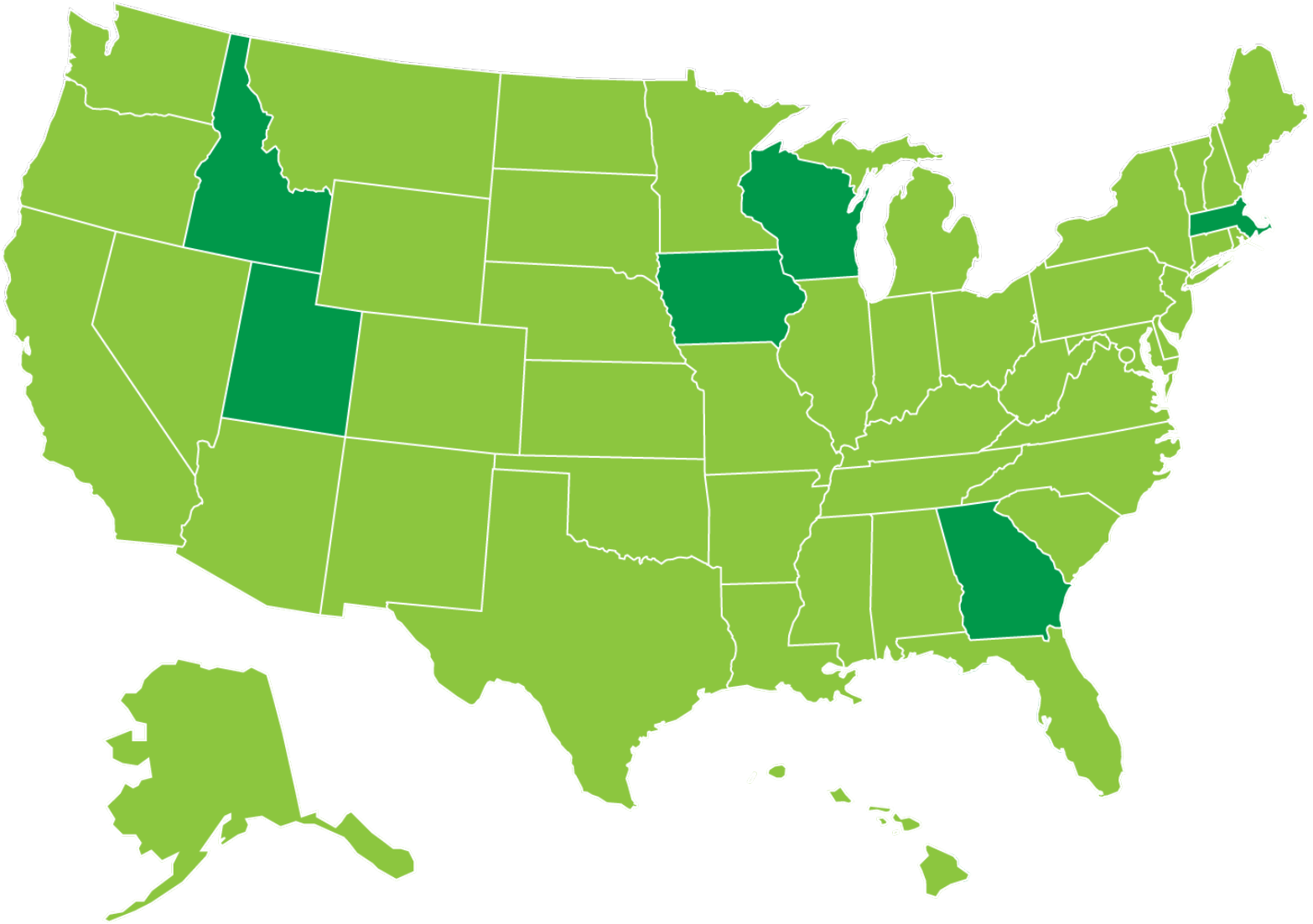
Multifamily: ☐ Apartment ☐ Condominium

☐ New Construction ☐ Addition to existing building ☐ Existing building renovation[i]

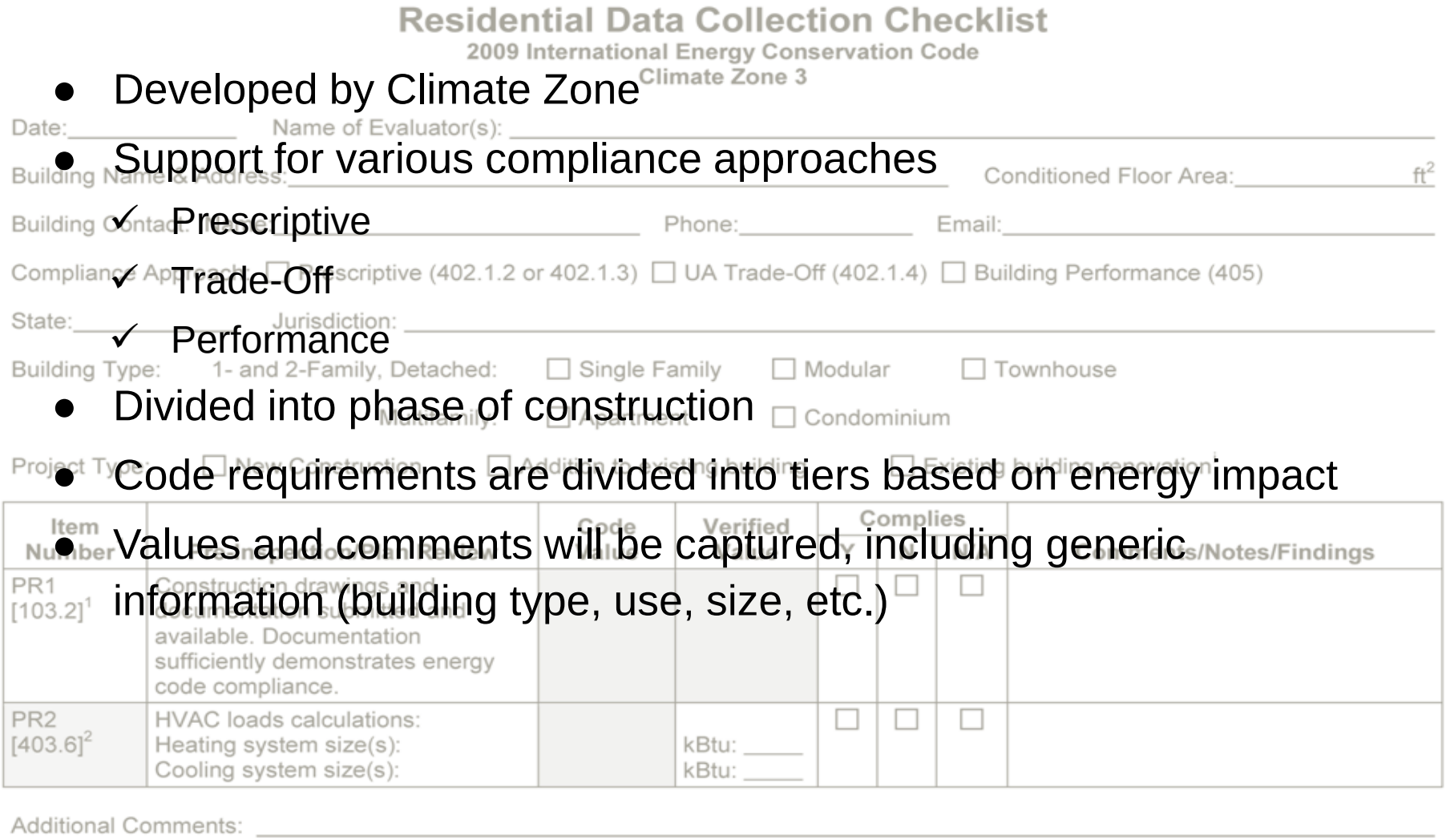
	Verified	Complies Y	Complies N	Complies N/A	Comments/Notes/Findings

Evaluated buildings are each assigned a compliance rating of 0–100% based on the proportion of code requirements that each has met, and the evaluated buildings' scores within a state are averaged to derive an overall compliance metric with an associated confidence.

Generating State Metrics



Evaluating the Buildings



Residential Data Collection Checklist

2009 International Energy Conservation Code

Climate Zone 3

Date: _____ Name of Evaluator(s): _____

Building Name & Address: _____ Conditioned Floor Area: _____ ft²

Building Contact: _____ Phone: _____ Email: _____

Compliance Approach: ☐ Prescriptive (402.1.2 or 402.1.3) ☐ UA Trade-Off (402.1.4) ☐ Building Performance (405)

State: _____ Jurisdiction: _____

Building Type: 1- and 2-Family, Detached: ☐ Single Family ☐ Modular ☐ Townhouse

Multifamily: ☐ Apartment ☐ Condominium

Project Type: ☐ New Construction ☐ Addition to Existing Building ☐ Existing Building Renovation

Item Number	Compliance Documentation Required	Code Minimum	Verified Value	Complies			Comments/Notes/Findings
PR1 [103.2][1]	Construction drawings and documentation available. Documentation sufficiently demonstrates energy code compliance.			☐	☐	☐	
PR2 [403.6][2]	HVAC loads calculations: Heating system size(s): Cooling system size(s):		kBtu: _____ kBtu: _____	☐	☐	☐	

Additional Comments: _____

- Developed by Climate Zone
- Support for various compliance approaches
  - ✓ Prescriptive
  - ✓ Trade-Off
  - ✓ Performance
- Divided into phase of construction
- Code requirements are divided into tiers based on energy impact
- Values and comments will be captured, including generic information (building type, use, size, etc.)

Composite Samples

Using the Evaluation Checklists

COMPLIANCE APPROACHES

Evaluating the Buildings

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Residential Data Collection Checklist

2009 International Energy Conservation Code
Climate Zone 3

Date:_____ Name of Evaluator(s): _____

Building Name & Address:_____ Conditioned Floor Area:_____ ft^2

Building Contact: Name:_____ Phone:_____ Email:_____

Compliance Approach: ☐ Prescriptive (402.1.2 or 402.1.3) ☐ UA Trade-Off (402.1.4) ☐ Building Performance (405)

State:_____ Jurisdiction: _____

Building Type: 1- and 2-Family, Detached: ☐ Single Family ☐

Multifamily: ☐ Apartment ☐

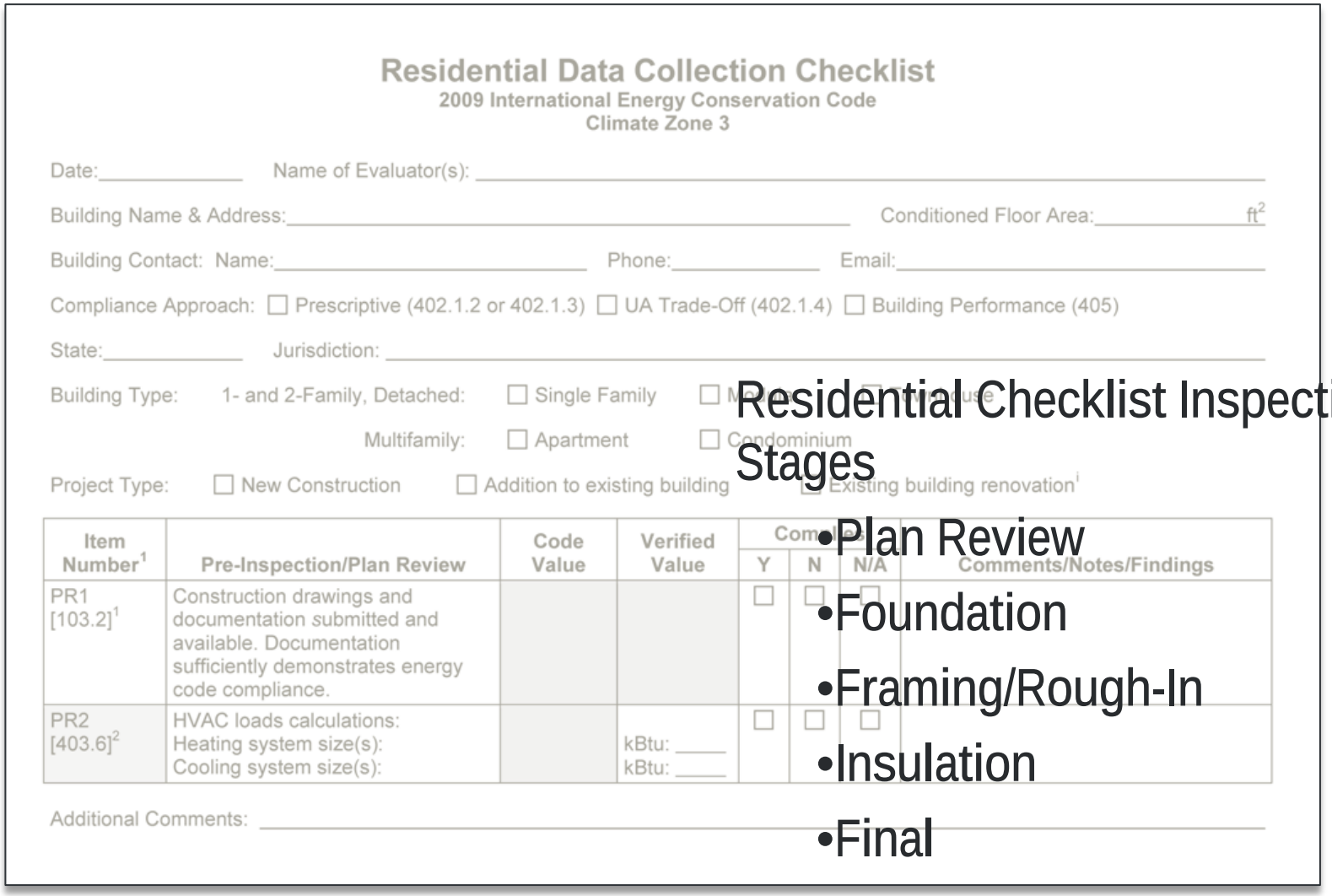
Project Type: ☐ New Construction ☐ Addition to existing buildi

Item Number[1]	Pre-Inspection/Plan Review	Code Value	Verified Value
PR1 [103.2][1]	Construction drawings and documentation submitted and available. Documentation sufficiently demonstrates energy code compliance.		
PR2 [403.6][2]	HVAC loads calculations: Heating system size(s): Cooling system size(s):		kBtu: ___ kBtu: ___

Additional Comments: _____

Item Number	Pre-Inspection/Plan Review
PR1 [103.2][1]	**Documentation**. Determine if a complete set of plans/construction drawings, specifications, and energy code compliance documentation is available in the building department. If there is no building department or the locality does not conduct plan review, this information should be obtained from the registered design professional or builder having responsibility for the project. If documentation indicating a trade-off or performance approach is not provided, a prescriptive approach must be assumed for verifying compliance. Construction documents should sufficiently demonstrate energy code compliance, including but not limited to the following information: • The location and R-values of insulation materials • U-factors and SHGC values for windows, doors, skylights, and other fenestration products • Information related to duct and piping location, insulation type and R-value, and means of sealing Under the assumption that only state or local government with a responsible enforcement and/or permitting agency are included in compliance evaluations, plans and documentation are expected to be held by the responsible agency. If this is not the case, mark this code requirement and the next (PR1 and PR2) as non-compliant, unless there is another entity responsible for enforcement identified (e.g. utility, contractor licensing board, etc.) in which case they should be contacted to review PR1 and PR2 information.
PR2 [403.6][2]	**HVAC Load Calculations**. Verify that HVAC load calculations have been completed and submitted. Verify the methodology used in the load calculations. List the resultant heating and/or cooling loads as applicable in the Verified Value column.

Using the Evaluation Checklists



Residential Data Collection Checklist

2009 International Energy Conservation Code
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Date:_____ Name of Evaluator(s): _____

Building Name & Address:_____ Conditioned Floor Area:_____ ft²

Building Contact: Name:_____ Phone:_____ Email:_____

Compliance Approach: ☐ Prescriptive (402.1.2 or 402.1.3) ☐ UA Trade-Off (402.1.4) ☐ Building Performance (405)

State:_____ Jurisdiction: _____

Building Type: 1- and 2-Family, Detached: ☐ Single Family ☐ Manufactured ☐ Modular

Multifamily: ☐ Apartment ☐ Condominium

Project Type: ☐ New Construction ☐ Addition to existing building ☐ Existing building renovation[i]

Item Number[1]	Pre-Inspection/Plan Review	Code Value	Verified Value	Compliance Y	N	N/A	Comments/Notes/Findings
PR1 [103.2][1]	Construction drawings and documentation submitted and available. Documentation sufficiently demonstrates energy code compliance.			☐	☐	☐	
PR2 [403.6][2]	HVAC loads calculations: Heating system size(s): Cooling system size(s):		kBtu: ____ kBtu: ____	☐	☐	☐	

Additional Comments: _____

Residential Checklist Inspection Stages

- Plan Review
- Foundation
- Framing/Rough-In
- Insulation
- Final

Using the Evaluation Checklists

Play Video

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Residential Data Collection Checklist

2009 International Energy Conservation Code
Climate Zone 3

Date:_____ Name of Evaluator(s): _____

Building Name & Address:_____ Conditioned Floor Area:_____ ft^2

Building Contact: Name:_____ Phone:_____ Email:_____

Compliance Approach: ☐ Prescriptive (402.1.2 or 402.1.3) ☐ UA Trade-Off (402.1.4) ☐ Building Performance (405)

State:_____ Jurisdiction: _____

Building Type: 1- and 2-Family, Detached: ☐ Single Family ☐ Modular ☐ Townhouse

Multifamily: ☐ Apartment ☐ Condominium

Project Type: ☐ New Construction ☐ Addition to existing building ☐ Existing building renovation[1]

Item Number[1]	Pre-Inspection/Plan Review	Code Value	Verified Value	Complies			Comments/Notes/Findings
				Y	N	N/A	
PR1 [103.2][1]	Construction drawings and documentation submitted and available. Documentation sufficiently demonstrates energy code compliance.			☐	☐	☐	
PR2 [403.6][2]	HVAC loads calculations: Heating system size(s): Cooling system size(s):		kBtu: _____ kBtu: _____	☐	☐	☐	

Foundation Inspection Provisions

Item Number	Foundation Inspection	Code Value	Verified Value	Complies Y	Complies N	Complies N/A	Comments/Notes/Findings
FO1 [402.2.8, 303.2][1]	Slab edge insulation R-value. Installed per manufacturer's instructions.	Unheated: R-0 Heated: R-5	R-_____	☐	☐	☐	
FO2 [402.2.8][1]	Slab edge insulation depth/length	Heated: 2 ft.	_____ ft.	☐	☐	☐	
FO3 [402.1.1, 303.2][1]	Basement wall exterior insulation R-value. Installed per manufacturer's instructions.	R-5	R-_____	☐	☐	☐	
FO4 [402.2.7][1]	Basement wall exterior insulation depth	10 ft. or to basement floor	_____ ft.	☐	☐	☐	
FO5 [402.2.9, 303.2][1]	Crawl space wall insulation R-value. Installed per manufacturer's instructions.	R-5 (cont.) R-13 (cavity)	R-_____ R-_____	☐	☐	☐	
FO6 [403.8][2]	Snow melt controls			☐	☐	☐	
FO7 [303.2.1][2]	Insulation protection			☐	☐	☐	

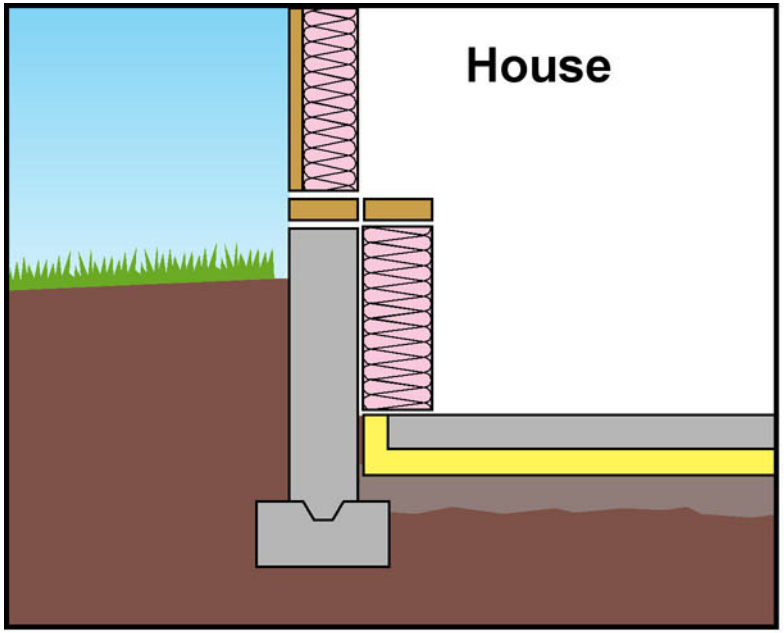
Slab Edge Insulation R-Value

- Insulation can be cut at 45 degree angle
- Verify R-values

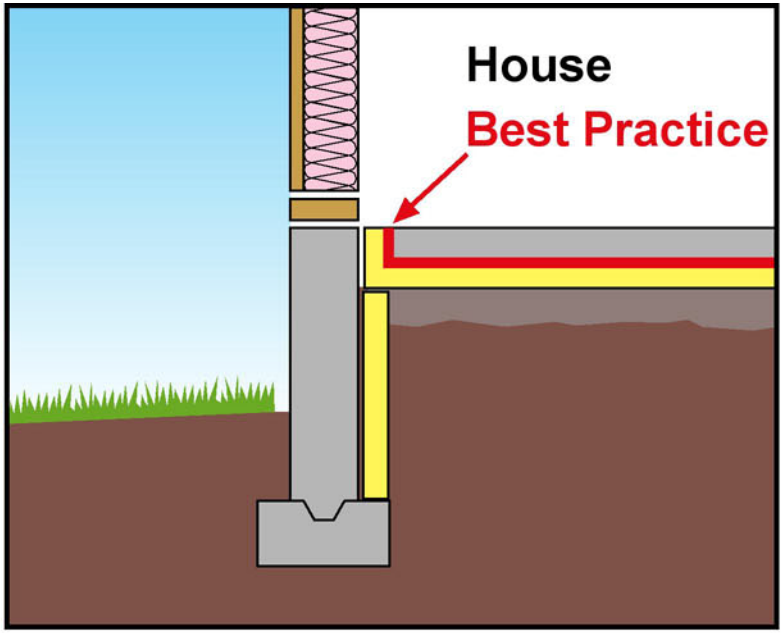
- After back fill

FO1 [402.2.8, 303.2][1]	Slab edge insulation R-value. Installed per manufacturer's instructions.

Slab Edge Insulation Depth/Length



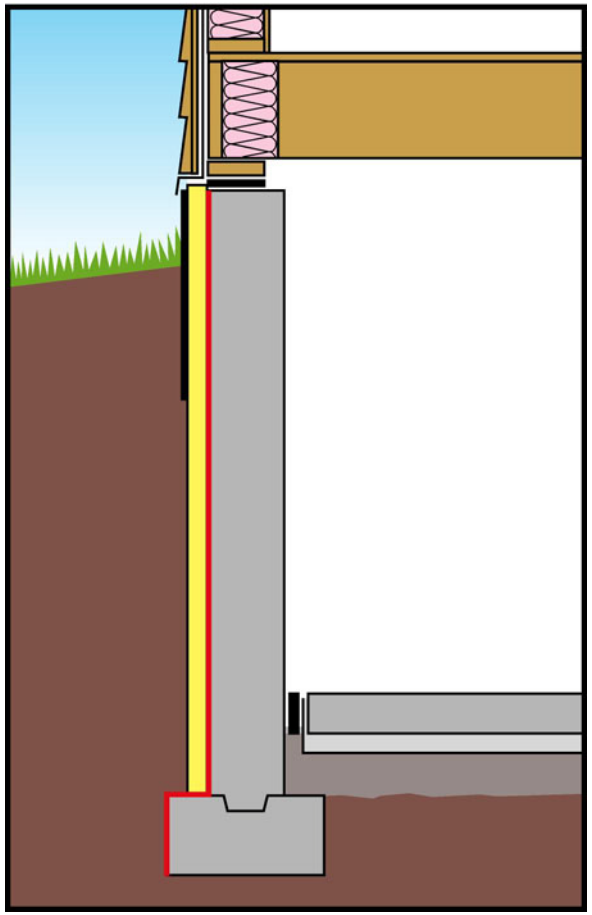
Basement Slab



Slab or Grade

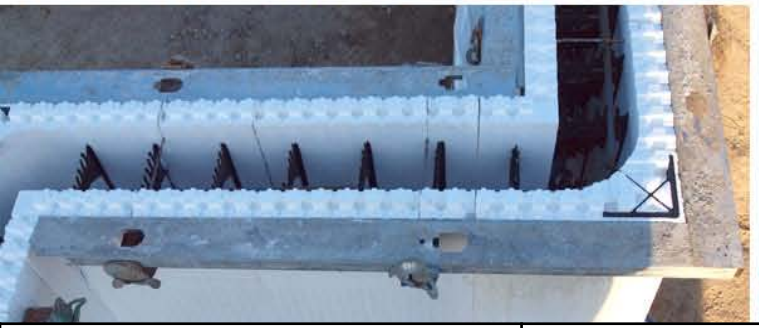
FO2 [402.2.8][1]	Slab edge insulation depth/length

Basement Wall Exterior Insulation



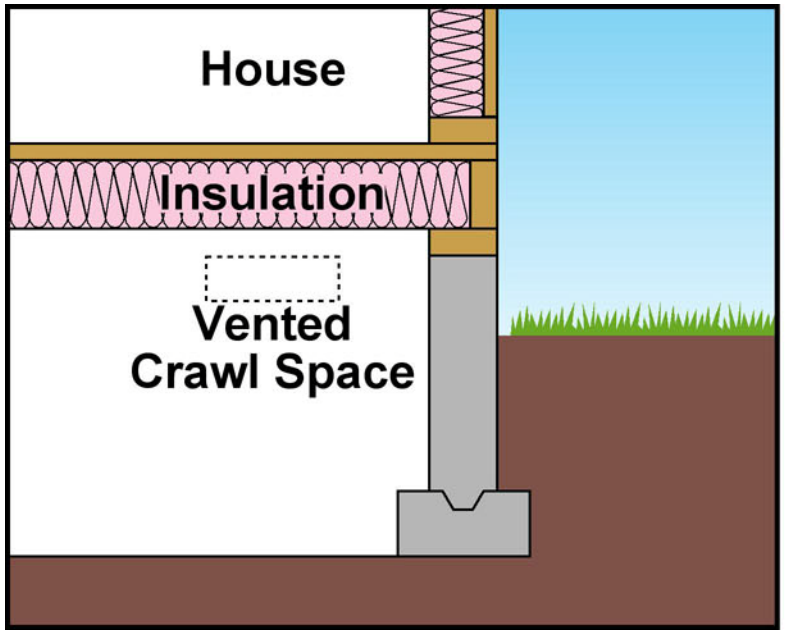
FO3 [402.1.1, 303.2][1]	Basement wall exterior insulation R-value. Installed per manufacturer's instructions.

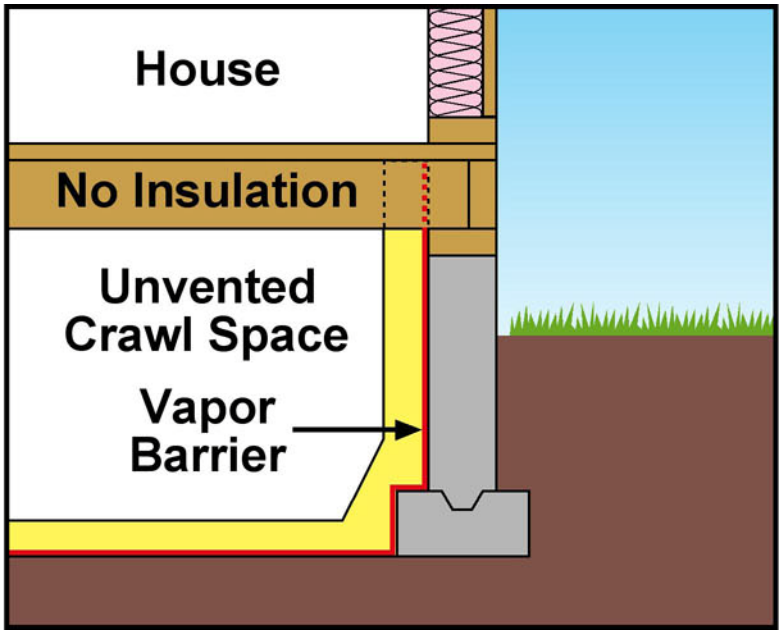
Basement Wall Insulation



FO4 [402.2.7][1]	Basement wall exterior insulation depth

Crawl Space Wall Insulation





FO5 [402.2.9, 303.2][1]	Crawl space wall insulation R-value. Installed per manufacturer's instructions.

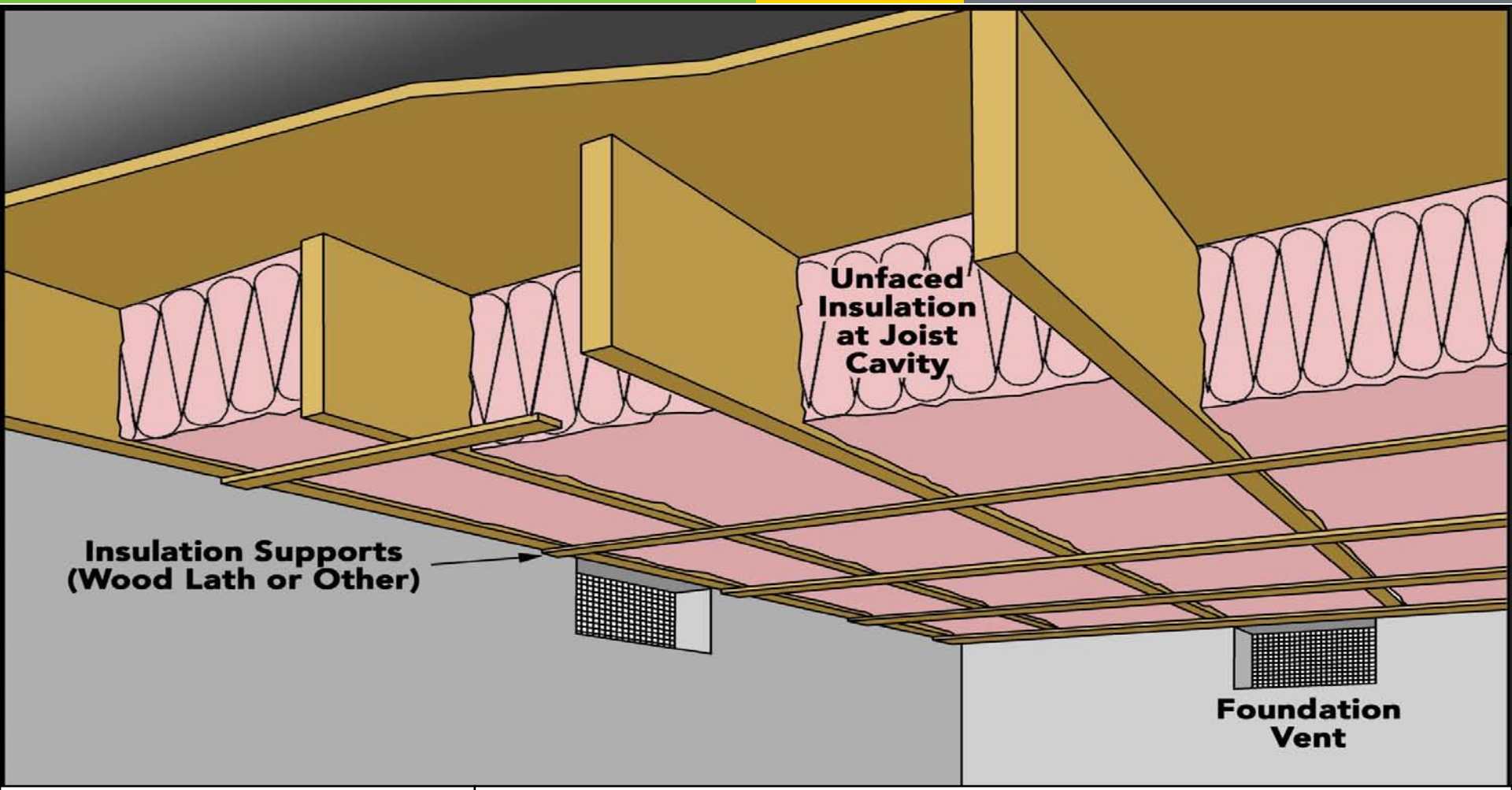
Insulation Protection

FO7 [303.2.1][2]	Insulation protection

Framing Inspection Provisions

Item Number	Framing / Rough-In Inspection	Code Value	Verified Value	Complies Y	Complies N	Complies N/A	Comments/Notes/Findings
FR1 [402.1.1, 402.2.5, 402.2.6, 303.2][1]	Floor insulation R-value (requirement varies depending on floor type). Installed per manufacturer's instructions.	R-13 (wood) (steel)[2]	R-_____	☐	☐	☐	
FR2 [402.1, 402.3.3, 402.3.5][1]	Glazing U-factor (including sunrooms)[3]	Sunrooms: U-0.5[4] Other: U-0.5[5]	U-_____ U-_____	☐	☐	☐	
FR3 [402.1, 402.3.5][1]	Skylight U-factor (including sunrooms)[3]	U-0.65	U-_____	☐	☐	☐	
FR4 [303.1.3][1]	NFRC labels present			☐	☐	☐	
FR5 [402.1.2, 402.3.3][1]	Glazing SHGC value[3]	SHGC: 0.3 0.5 maximum[6]	SHGC: _____	☐	☐	☐	
FR6 [402.1.1, 303.2][1]	Mass wall exterior insulation R-value. Installed per manufacturer's instructions.	R-5[7]	R-_____	☐	☐	☐	
FR7 [403.2.1][1]	Duct insulation	R-8 (attic supply) R-6 (other)	R-_____	☐	☐	☐	
FR8 [403.2.2][1]	Duct sealing complies with listed sealing methods			☐	☐	☐	
FR9 [403.2.2][1]	Duct tightness testing	8 cfm (to outdoors) 12 cfm	_____ cfm	☐	☐	☐	

Floor Insulation R-Value

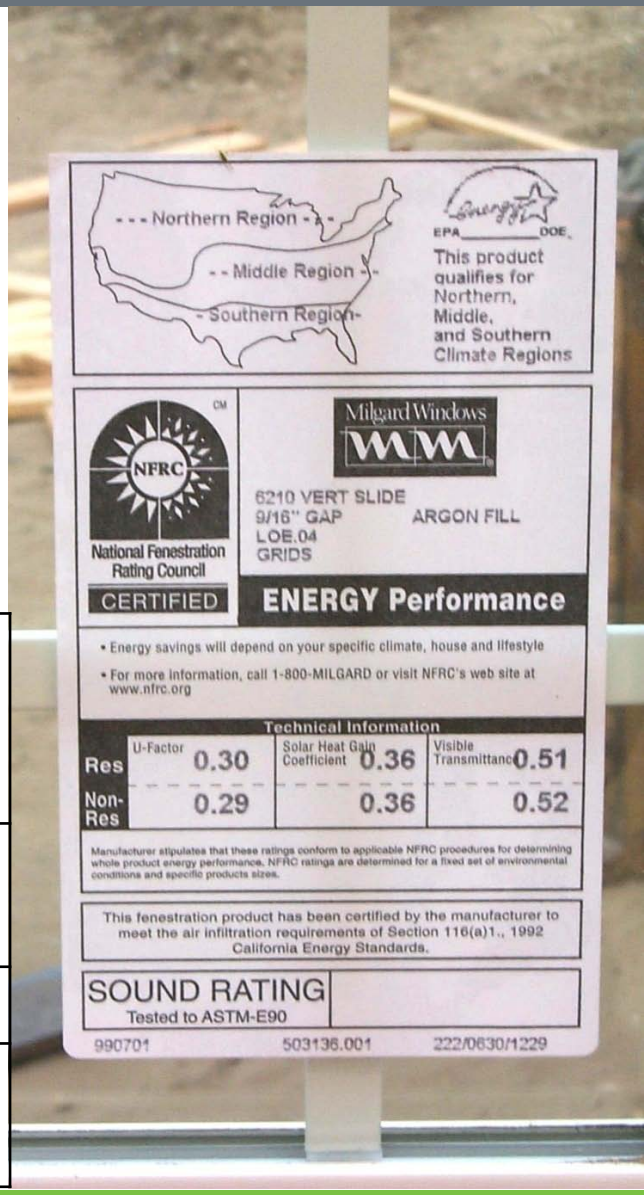


FR1 [402.1.1, 402.2.5, 402.2.6, 303.2][1]	Floor insulation R-value (requirement varies depending on floor type). Installed per manufacturer's instructions.

Glazing & Skylights

- Determine and record the U-factor(s) for the window, door, and glass block assemblies installed in the building envelope that are not skylights (e.g., are at least 15 degrees from vertical), including fenestration assemblies installed in a sunroom that is thermally isolated from the rest of the building.

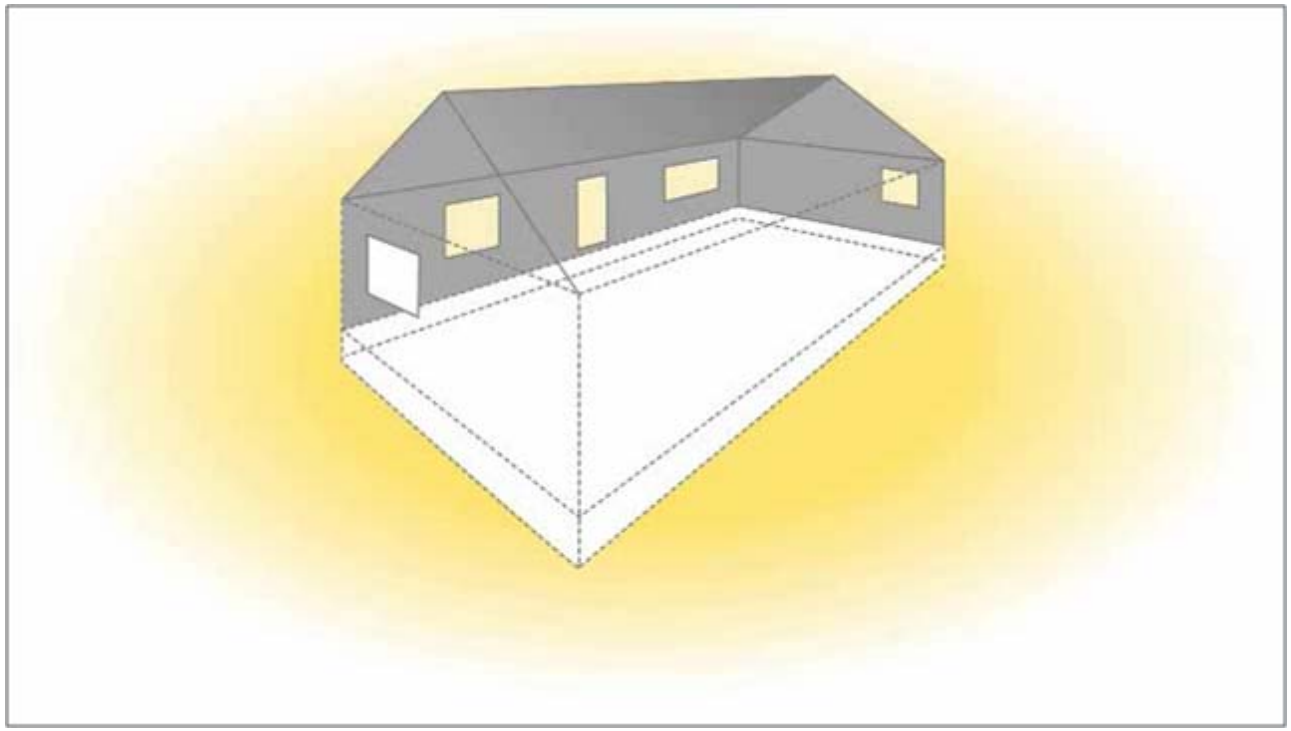
FR2 [402.1, 402.3.3, 402.3.5][1]	Glazing U-factor (including sunrooms)
FR3 [402.1, 402.3.5][1]	Skylight U-factor (including sunrooms)[3]
FR4 [303.1.3][1]	NFRC labels present
FR5 [402.1.2, 402.3.3][1]	Glazing SHGC value[4]



Mass Wall Insulation and Installation

FR6 [402.1.1, 303.2][1]	Mass wall exterior insulation R-value. Installed per manufacturer's instructions.

Duct System in the Home

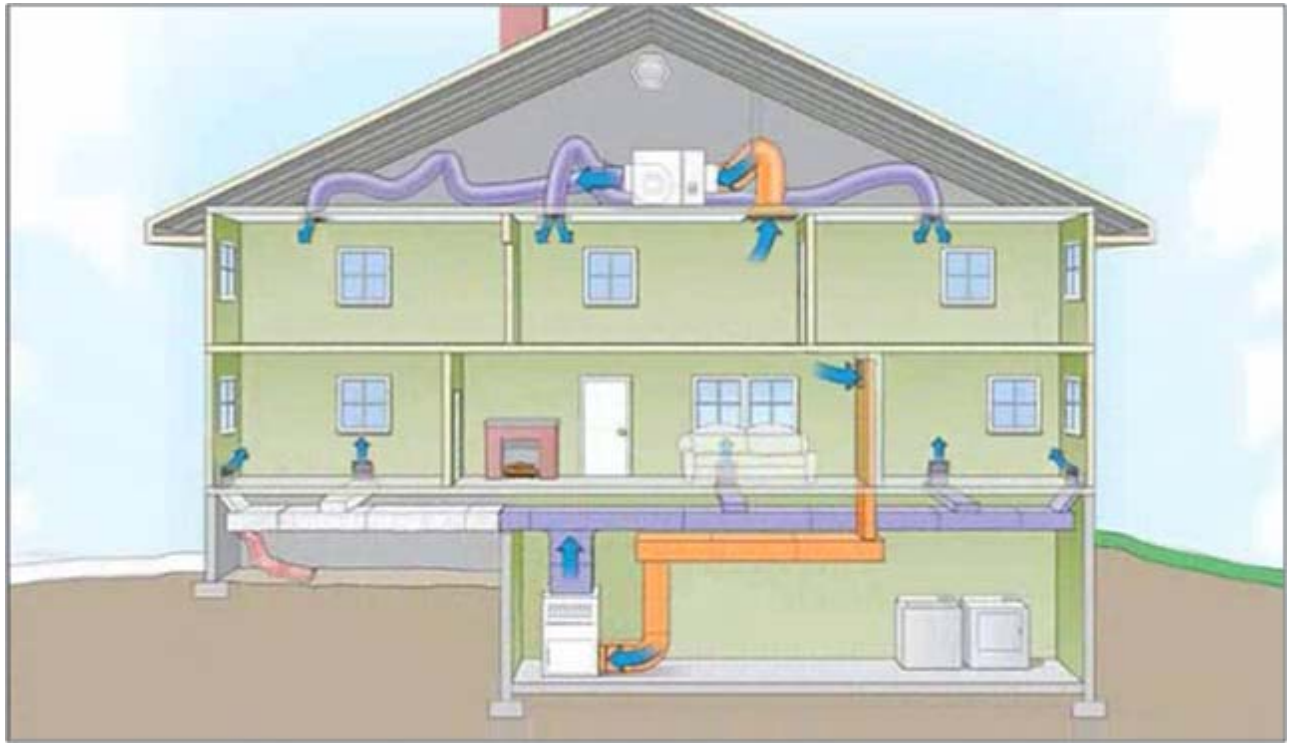


Courtesy: WSU Extension Energy Program

Duct Insulation

FR7 [403.2.1][1]	Duct insulation

Duct Leaks



Courtesy: WSU Extension Energy Program

Duct Sealing

Ducts, air handlers, filter boxes, and building cavities used as return air ducts have joints and seams sealed.

FR8 [403.2.2][1]	Duct sealing complies with listed sealing methods

33

Duct Tightness Testing

FR9 [403.2.2][1]	Duct tightness testing

Building Cavities as Supply Ducts

FR10 [403.2.3][1]	Building cavities NOT used for supply ducts

HVAC Piping Insulation

FR11 [403.3][2]	HVAC piping insulation

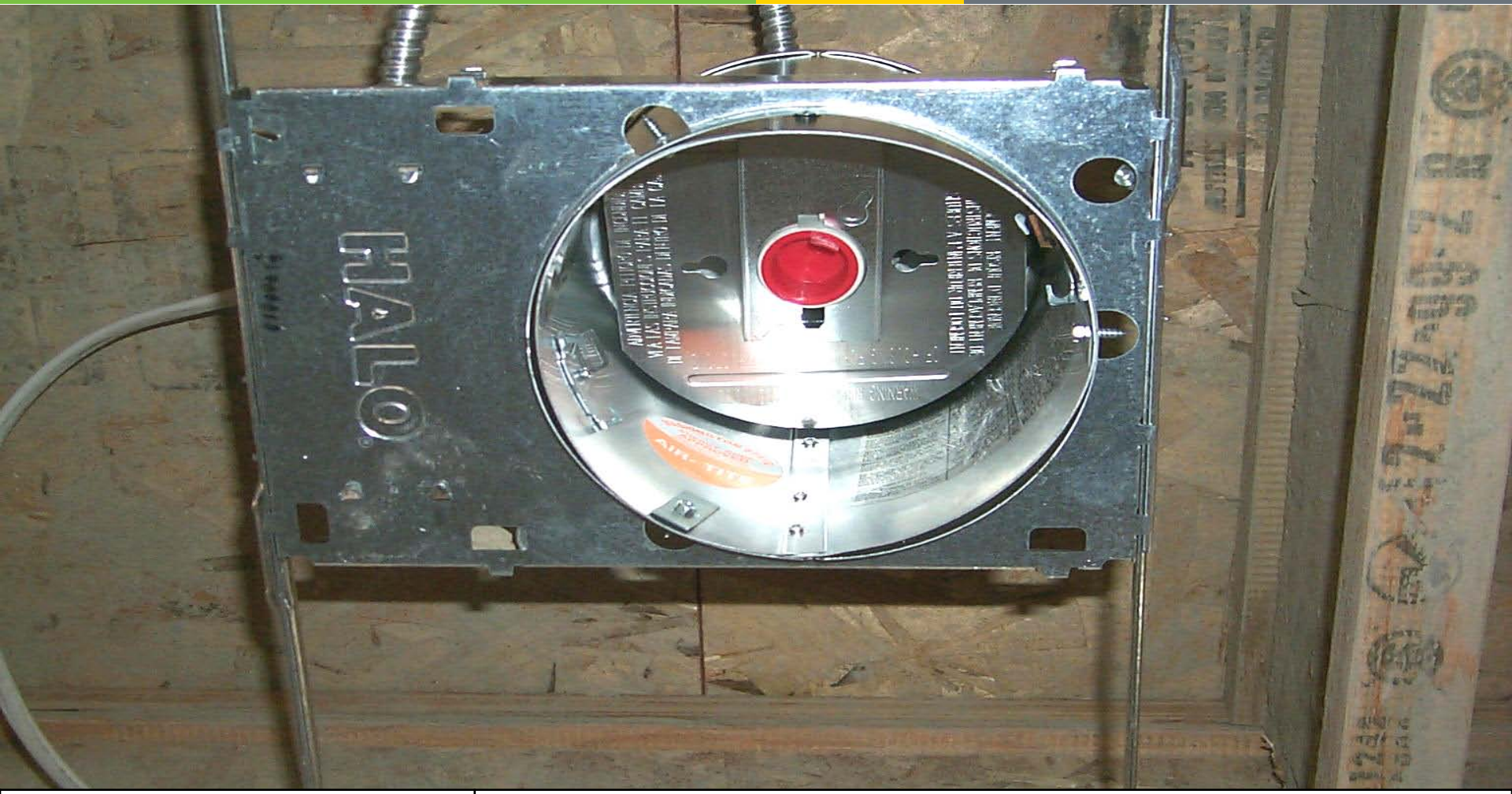
Outdoor Intake/Exhaust Openings

FR12 [403.5][2]	Dampers Installed on all outdoor Intake and exhaust openings

Circulating Hot-Water Piping Insulation

FR13 [403.4][2]	Circulating hot-water piping insulation

Recessed Lighting Fixtures



FR14 [402.4.5][2]	Recessed lighting fixtures meet infiltration criteria

Fenestration and Door Air Leakage

FR15 [402.4.4][2]	Glazed fenestration air leakage: Swinging door air leakage

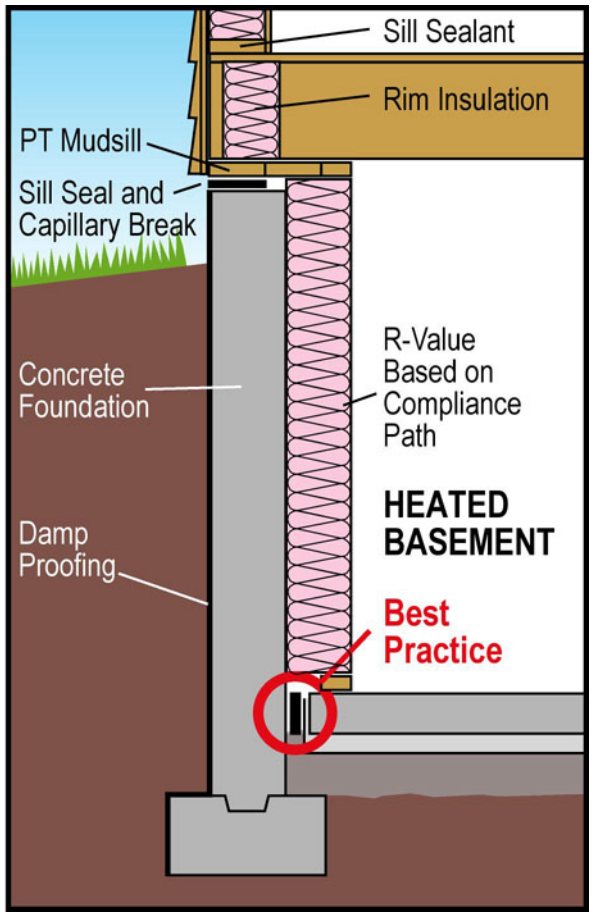
Insulation Inspection Provisions

Item Number	Insulation Inspection	Code Value	Verified Value	Complies			Comments/Notes/Findings
				Y	N	N/A	
IN1 [402.1.1 402.2.5 402.2.4, 303.2][1]	Wall insulation R-value. Installed per manufacturer's instructions.	R-13 (wood) R-8 (mass)[8] (steel)[9]	R-_____	☐	☐	☐	
IN2 [402.1.1][1]	Basement wall interior insulation R-value. Installed per manufacturer's Instructions.	R-5 (cont) R-13 (cavity)	R-_____	☐	☐	☐	
IN3 [402.2.7][1]	Basement wall interior insulation depth	10 ft or to basement floor	_____ ft	☐	☐	☐	
IN4 [402.2.11][1]	Sunroom wall insulation. Installed per manufacturer's Instructions.	R-13	R-_____	☐	☐	☐	
IN5 [402.4.1, 402.4.2][1]	Air sealing complies with sealing requirements or tested	Visual or ACH 50<=7	ACH 50 = _____	☐	☐	☐	
IN6 [303.1][2]	All installed insulation labeled or installed R-value provided			☐	☐	☐	

Wall Insulation and Installation

IN1 [402.1.1 402.2.5 402.2.4, 303.2][1]	Wall insulation R-value. Installed per manufacturer's instructions.

Basement Wall Interior Insulation



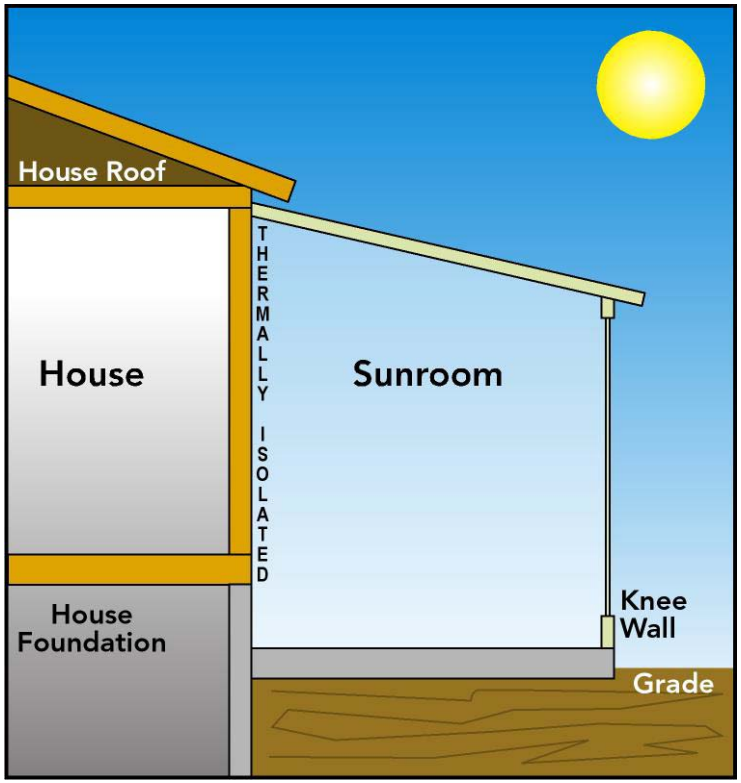
IN2 [402.1.1][1]	Basement wall interior insulation R-value. Installed per manufacturer's Instructions.

Basement Wall Insulation Depth

IN3 [402.2.7][1]	Basement wall interior insulation depth

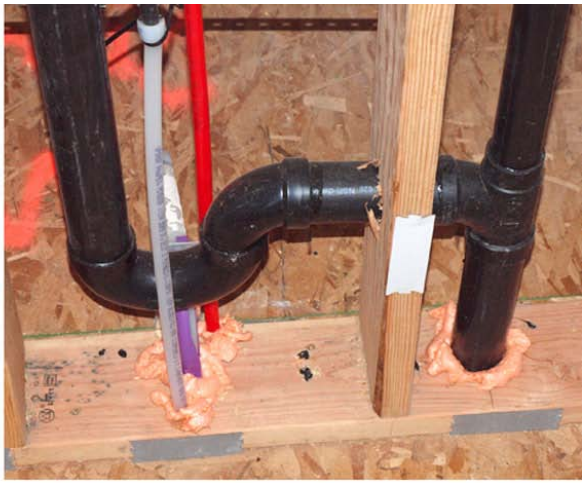
Sunroom Wall Insulation

Joyce Mfc. Co/Oasis© Sunrooms, Photo is copyrighted and cannot be reproduced



IN4 [402.2.11][1]	Sunroom wall insulation. Installed per manufacturer's Instructions.

- Air Sealing (Blower Door Test)
- Check List

IN5 [402.4.1, 402.4.2][1]	Air sealing complies with sealing requirements or tested

Air Sealing Checklist

Visual Inspection

Air Sealing Data Collection Checklist
2009 International Energy Conservation Code
AIR BARRIER AND INSULATION INSPECTION COMPONENT CRITERIA 402.4.2

Date:_____ Name of Evaluator(s):_____ Conditioned Floor Area:_____ ft²
Building Name & Address:_____ Phone:_____ Email:_____
Building Contact: Name:_____
Compliance Approach: ☐ Prescriptive ☐ UA Trade-Off ☐ Building Performance
State:_____ Jurisdiction:_____
Building Type: 1- and 2-Family, Detached: ☐ Single Family ☐ Modular ☐ Townhouse
Multifamily: ☐ Apartment ☐ Condominium
Project Type: ☐ New Construction ☐ Addition to existing building ☐ Existing building renovation

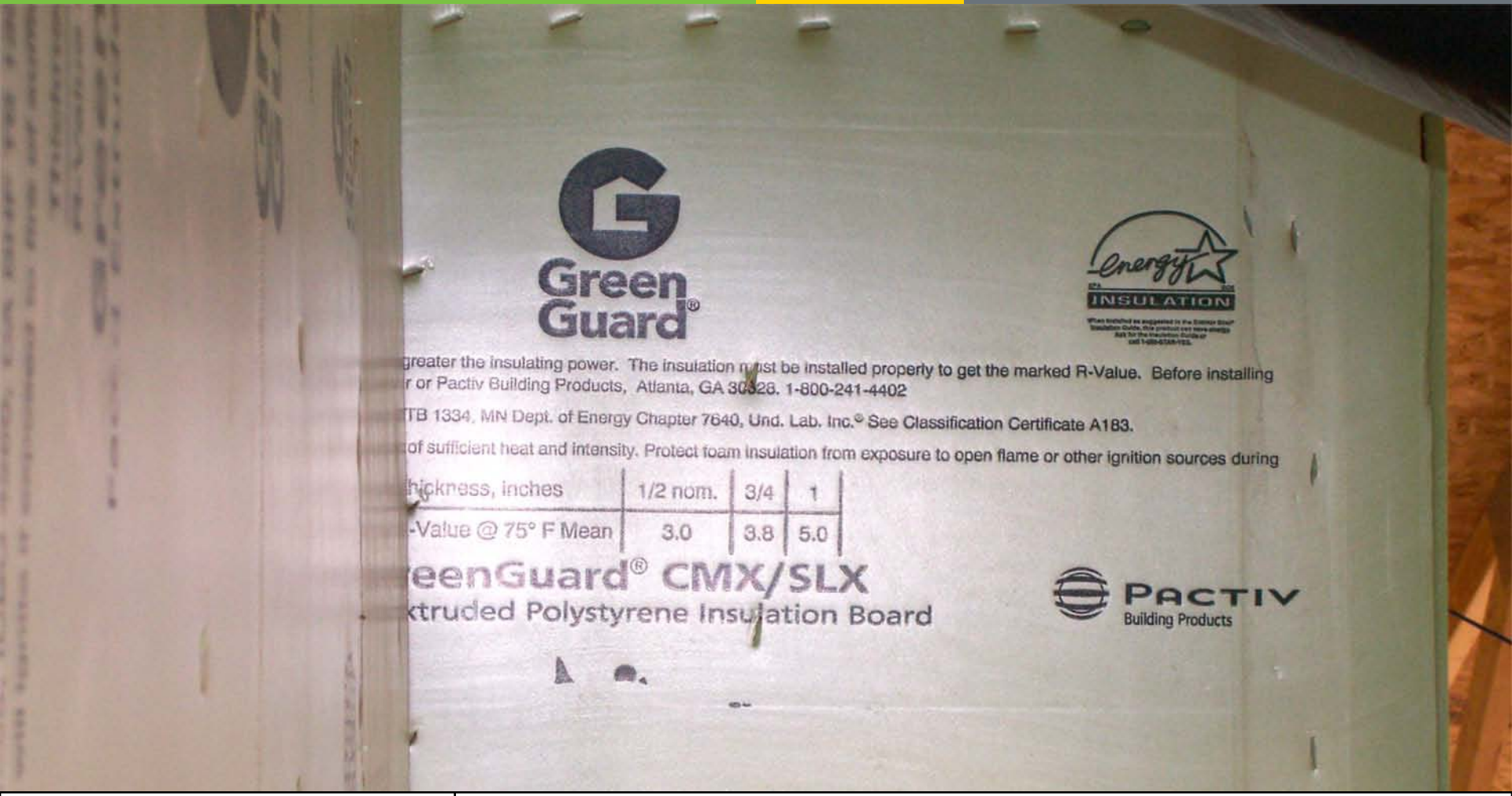
Component	Criteria	Complies Y	Complies N	Complies N/A	Comments/Notes/Findings
Air barrier and thermal barrier	Exterior thermal envelope insulation for framed walls is installed in substantial contact and continuous alignment with building envelope air barrier. Breaks or joints in the air barrier are filled or repaired. Air-permeable insulation is not used as a sealing material. Air-permeable insulation is inside of an air barrier.	☐	☐	☐	
Ceiling/attic	Air barrier in any dropped ceiling/soffit is substantially aligned with insulation and any gaps are sealed. Attic access (except unvented attic), knee wall door, or drop down stair is sealed.	☐	☐	☐	
Walls	Corners and headers are insulated. Junction of foundation and sill plate is sealed.	☐	☐	☐	
Windows and doors	Space between window/door jambs and framing is sealed.	☐	☐	☐	
Rim joists	Rim joists are insulated and include an air barrier.	☐	☐	☐	
Floors (including above-garage and cantilevered floors)	Insulation is installed to maintain permanent contact with underside of subfloor decking. Air barrier is installed at any exposed edge of insulation.	☐	☐	☐	
Crawl space walls	Insulation is permanently attached to walls. Exposed earth in unvented crawl spaces is covered with Class I vapor retarder with overlapping joints taped.	☐	☐	☐	
Shafts, penetrations	Duct shafts, utility penetrations, knee walls and flue shafts opening to exterior or unconditioned space are sealed.	☐	☐	☐	

Additional Comments:_____

Blower Door Testing

IN5 [402.4.1, 402.4.2][1]	Air sealing complies with sealing requirements or tested

Insulation Labeling

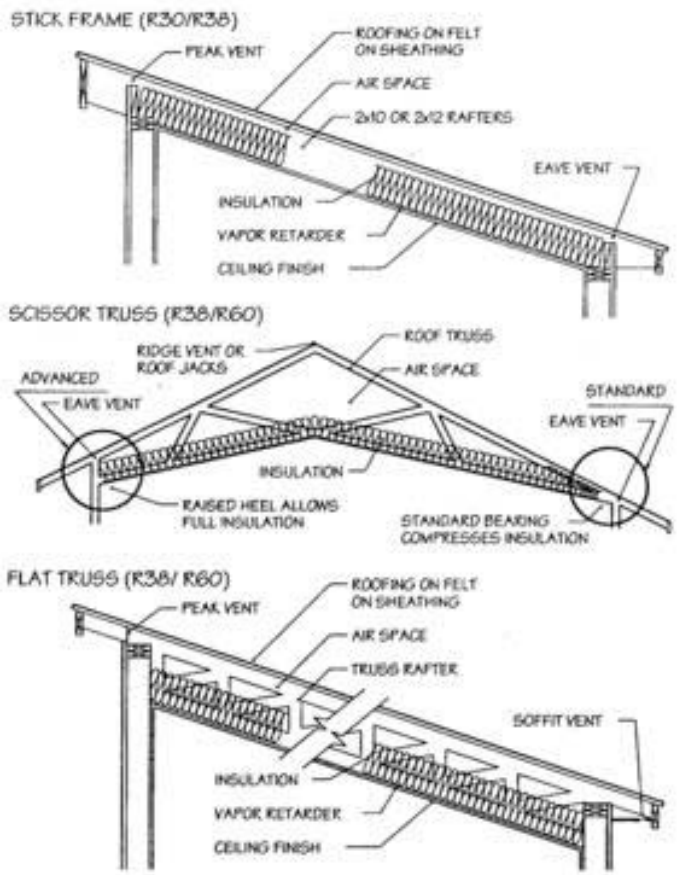


IN6 [303.1][2]	All installed insulation labeled or installed R-value provided

Final Inspection Provisions

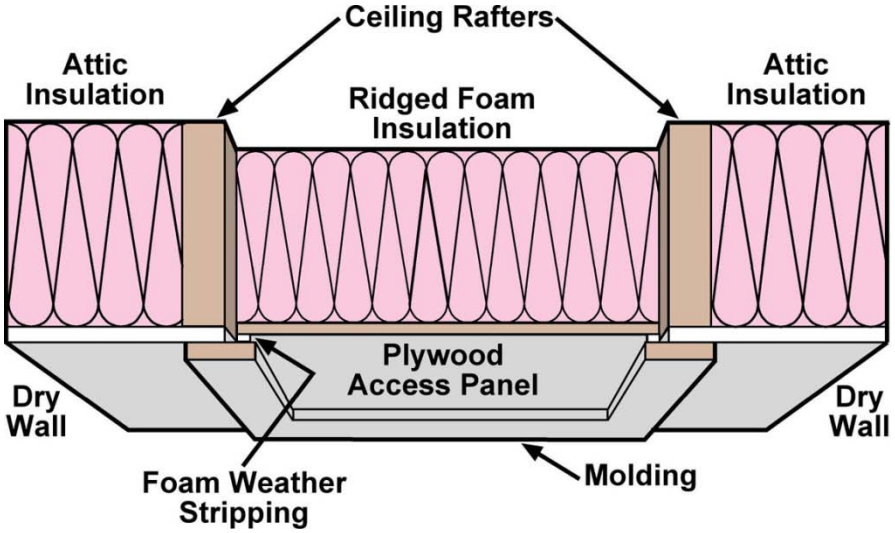
Item Number	Final Inspection Provisions	Cod Value	Verified Value	Complied			Comments/Notes/Findings
				Y	N	N/A	
FI1 [402.1.1 402.2.1 402.2.2, 303.1.1.1,303.2][1]	Ceiling insulation R-value. Installed per manufacturer's instructions. Blown insulation marked every 300 ft^2.	R-30	R-_____	☐	☐	☐	
FI2 [402.2.3][1]	Attic access hatch and door insulation	R-30	R-_____	☐	☐	☐	
FI3 [402.2.11][1]	Sunroom ceiling insulation. Installed per manufacturer's instructions	R-19	R-_____	☐	☐	☐	
FI4 [402.1.1, 402.3.4][1]	Door U-factor	U-0.5[10]	U-_____	☐	☐	☐	
FI5 [403.2.6][1]	Heating and cooling equipment type, make and model as per plans			☐	☐	☐	
FI6 [404.1][1]	Lighting - 50% of lamps are high efficacy			☐	☐	☐	
FI7 [403.1.1][2]	Programmable thermostats installed on forced air furnaces			☐	☐	☐	
FI8 [403.3][2]	Heat pump thermostat installed on heat pumps			☐	☐	☐	

Ceiling Insulation and Installation



FI1 [402.1.1 402.2.1 402.2.2, 303.1.1.1,303.2][1]	Ceiling insulation R-value. Installed per manufacturer's instructions. Blown insulation marked every 300 ft^2.

Attic Access Insulation



FI2 [402.2.3][1]	Attic access hatch and door insulation

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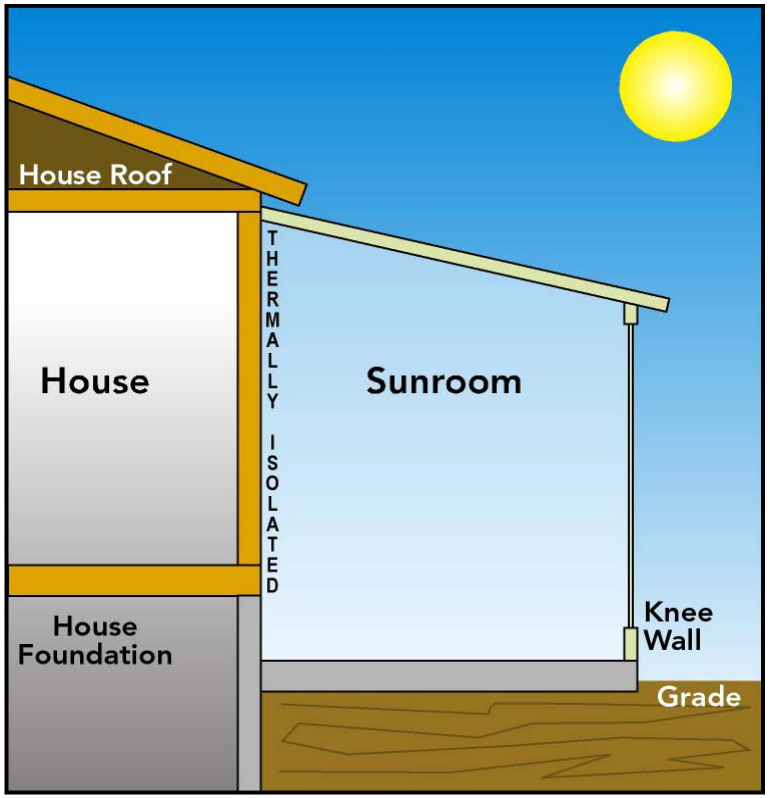
Sunroom Ceiling Insulation

Joyce Mfc. Co/Oasis© Sunrooms, Photo is copyrighted and cannot be reproduced



FI3 [402.2.11][1]	Sunroom ceiling insulation. Installed per manufacturer's instructions

Door U-Factor

FI4 [402.1.1, 402.3.4][1]	Door U-factor

Verify make and model against information on the plans

FI5 [403.2.6][1]	Heating and cooling equipment type, make and model as per plans

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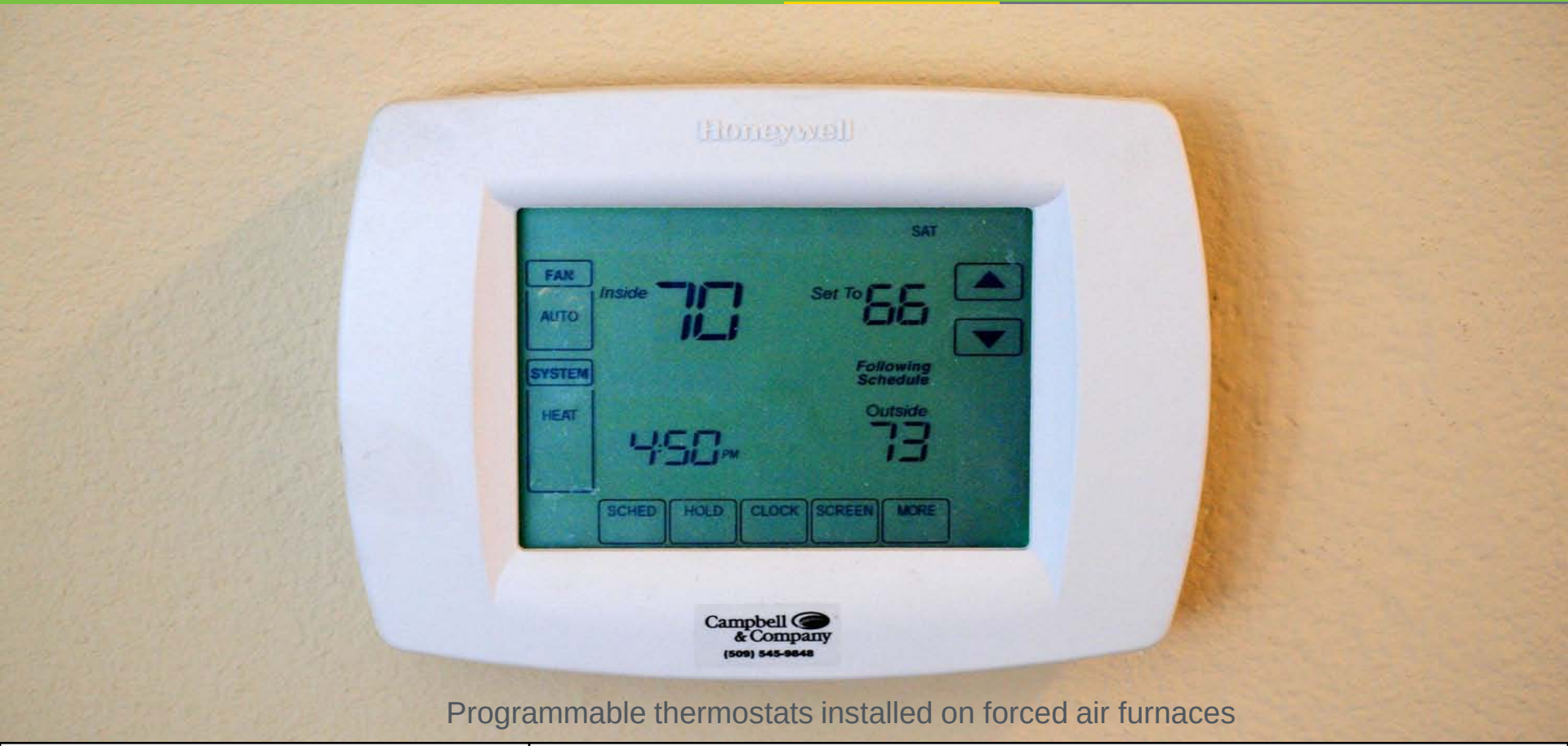
FI6 [404.1][1]	Lighting - 50% of lamps are high efficacy

Programmable Thermostat



Programmable thermostats installed on forced air furnaces

FI7 [403.1.1][2]	Programmable thermostats installed on forced air furnaces
FI8 [403.3][2]	Heat pump thermostat installed on heat pumps

Fireplace Gasketed Doors

FI9 [402.4.3][2]	Fireplace - Gasketed doors and outdoor air for combustion

Service Water Piping System Controls

FI10 [403.4][2]	Circulating service hot water systems have automatic or accessible controls

Pools shall have:

- Readily accessible on/off switch
- Time switches for heaters and pumps
- Vapor retardant pool covers
- R-12 insulation covers when heated above 90 F

FI11 [403.9][2]	Pool heaters, covers, and automatic or accessible controls

2009 IECC Energy Efficiency Certificate

Insulation Rating	R-Value
Ceiling / Roof	38.00
Wall	19.00
Floor / Foundation	19.00
Ductwork (unconditioned spaces):	_____

Glass & Door Rating	U-Factor	SHGC
Window	0.45	0.35
Door	0.40	0.25

Heating & Cooling Equipment	Efficiency
Heating System:_____	_____
Cooling System:_____	_____
Water Heater:_____	_____

Name: Bob White **Date:** June 12, 2010

Comments:

FI12 [401.3][2]	Certificate posted

Checklist Consolidation and Scoring

- BECP will provide an online database and web form
- BECP will provide services to states for converting paper checklists to the electronic format.

Practicum

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

BECP – Your Resource

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Additional resources, including:

- *Code Notes*
- *Technical Assistance to Users*
- *Energy Codes 101*
- *Setting the Standard*
- *Training Materials*
- *Resource Center*

Are available through the Building Energy Codes Program

For more information, contact:
Jean Boulin, Program Manager
Phone: 202-586-9870
Email: Jean.Boulin@ee.doe.gov

www.energycodes.gov

Building Energy Code Program Resources

U.S. DEPARTMENT OF ENERGY | Energy Efficiency & Renewable Energy

Building Energy Codes Assistance for States	**Status of State Energy Codes**	Check on the current code status of any U.S. state or territory using BECP's interactive map tool. Also find links to state specific portions of BECP's recent nationwide analysis reports, state-level energy official contact information, and many other details.	www.energycodes.gov/states
	Technical Assistance to States	BECP provides specialized technical assistance to the states in the form of economic analysis, code comparisons, webcast training, and compliance material development requested by states to help them adopt, upgrade, implement, and enforce their building energy codes.	http://www.energycodes.gov/states/techAssist.stm
	State Compliance Assistance	BECP has developed an approach states can use for measuring compliance with building energy codes.	http://www.energycodes.gov/arra/compliance_evaluation.stm
No-cost Compliance Tools	**Residential Code Compliance Software**	RES*check*™ and RES*check-Web*™	http://www.energycodes.gov/software.stm
	Commercial Code Compliance Software	COM*check*™ and COM*check-Web*™	
Training	**Codes University**	To help stakeholders broaden and deepen their knowledge of building energy codes, BECP is collecting its diverse training resources in an extensive Codes University that features webcasts, training videos, self-paced online courses, presentations, and other BECP materials and tools.	www.energycodes.gov/training
Resource Center	**Building Energy Codes Knowledge Base**	This knowledge base provides a variety of different media types, including articles, graphics, online tools, presentations, and videos that anyone can use to create their own training and presentations.	http://resourcecenter.pnl.gov/
Advocacy	**The Building Codes Assistance Project (BCAP)**	BCAP is an initiative of the Alliance to Save Energy, the American Council for an Energy-Efficient Economy, and the Natural Resource Defense Council that provides states with code advocacy assistance on behalf of DOE.	www.bcap-energy.org